

What Makes a Home Resilient?

The right mix of materials and design can mean the difference between survival and total loss.

Renewable Energy
Onsite wind and solar PV systems save energy and turn your home into a "power house" that can potentially feed the grid. Solar shingles or a building integrated photovoltaic (BIPV) system can minimize the aesthetic impact of a solar array.

Right Roofing
Metal roofing is a good choice for both fire and storm resistance. It is also the ideal roofing material for supporting solar PV installations and harvesting rainwater.

Stormwater Management
Directing stormwater to a rain garden, swale or a cistern reduces flooding erosion and water pollution and can recharge groundwater.

Durable Materials
Long-lasting siding materials such as brick, stucco and fiber cement also tend to be fire resistant. Look for products with 50-year warranties. If you do use wood for trim or siding, choose a long-lasting, sustainably harvested species such as cedar.

Rainwater Harvesting
Harvesting and storing water onsite not only saves energy, but ensures your home has a reserve supply if centralized service is interrupted. Recycling graywater and using it to water landscaping or flush toilets will stretch your home's water budget.

Redundant Systems
Back-up power sources ensure your home can ride out storms and other emergencies. Propane or gas-powered generators are a smart option, as are solar thermal systems that can operate independently of the grid.

Stormproof Windows
Reinforced windows with impact glass prevent wind and water from entering the home. A rolling shutter system can protect your windows during extreme conditions.

Smart Siting
Locating homes out of flood and wind zones and siting them to best take advantage of passive solar energy makes them inherently resilient. In the case of this home, its unique circular shape prevents pressure from building up on any one side.

Solid Structure
Reinforced wood framing and alternative systems, such as structural insulated panels (SIPs) or insulated concrete forms (ICFs), are all good options for creating strong, durable buildings.

Multiple Tiedowns
Make sure your home is connected from the roof to the foundation. Metal strapping and hangers help the structure resist seismic forces and high winds.

Firewise Landscaping
Removing brush and kindling around structures minimizes your home's vulnerability to fire. Choose drought-tolerant, fire-resistant native plants for landscaping; visit www.firewise.org for tips on what plants are appropriate for your region.

PANDEMIC-AWARE HOME DESIGN

The next generation of resilient home will need to address new threats such as Pandemics, power outages and food insecurity. We'll cover these in more detail on page 30. Here's a quick checklist:

SMARTER BATHROOMS

From UVC virus-killing lights to self-closing toilet lids, next generation bathrooms allow homeowner to reduce the risk of family transmission of disease.

ISOLATION ROOMS

When one family member is sick, many HVAC systems could quickly spread contagions throughout the home. Zoning the home with smart dampers or choosing individual heating modules such as heat pumps can minimize the risk of spread.

FOOD SECURITY

During long periods of quarantine or "social isolation," the quantity and quality of food becomes a priority concern. Homes may require additional refrigeration, storage space for supplies and generator or batter backups to keep systems operating in a prolonged power outage.

WATER ACCESS AND PURIFICATION

Fresh drinking water is even more important than food during a long quarantine. Resilient homes include water filtration, and, if possible, a backup method of acquiring water, such as a well or rainwater collection.

HOME SECURITY

As much to reduce anxiety as to head off real threats, home security systems can deter looters, alert residents to trespassers and alert local authorities if a real breach happens. New systems include camera surveillance and allow for remote monitoring and interaction with mail carriers and visitors as well.

ENERGY EFFICIENCY

A home that requires less energy to heat, cool and power is simply a safer place to be when the world is in chaos. If resources become tight, there will be less belt tightening necessary to survive and stay safe.